

WHAT IS CLAIMED IS:

1. A coupling structure for a double-wall container, comprising:
  - a hollow portion having a through-hole as a fluid passage;
  - a flange portion provided at an upper end of the hollow portion;
  - a first connecting portion provided at a lower end of the hollow portion and adapted to be connected with an opening portion of an inner container;
  - a second connecting portion provided in the vicinity of the flange portion and adapted to be connected with an opening portion of an outer container;
  - at least one annular elastic fin provided between the first connecting portion and the second connecting portion, said annular elastic fin extending outward and downward, wherein an edge of the fin is adapted to be in contact with an inner wall of the opening portion of the outer container, and
  - at least one groove as an air passage formed and extending through the flange portion and the second connecting portion, said groove remaining open when the opening portion of the outer container is connected with the second connecting portion.
2. The structure according to Claim 1, wherein a space is defined between the inner container connected with the first connecting portion and the outer container connected with the second connecting portion, and the fin is such that when pressure in the space increases, the fin is deformed upward to increase sealing between the edge of the fin and the inner wall of the opening portion of the outer container, and when pressure in the space decreases, the fin is deformed downward to decrease sealing between the edge of the fin and the inner wall of the opening portion of the outer container, thereby introducing air into the space through the groove.
3. The structure according to Claim 1, wherein the hollow portion is cylindrical.
4. The structure according to Claim 1, wherein the hollow portion has at least one through-bore which communicates (i) a space defined between the inner container connected with the first connecting portion and the outer container connected with the second connecting portion, and (ii) a space defined on top of the flange portion, and which is isolated from the hollow of the hollow portion.

5. The structure according to Claim 4, wherein the through-bore is formed from between the fin and the first connecting portion to the top through the flange portion.

6. The structure according to Claim 4, further comprising a through-bore closing disk adapted to be placed on top of the flange portion to close the through-bore without closing the hollow of the hollow portion.

7. The structure according to Claim 1, wherein the second connecting portion has an annular convex portion.

8. The structure according to Claim 1, which is made of an elastic resin composition.

9. A fluid-storing container comprising:

an inner container for storing a fluid, which is flexible;

an outer container in which the inner container is placed;

a coupling member having the coupling structure of Claim 1 for coupling the inner container and the outer container, wherein an opening portion of the inner container is connected with the first connecting portion, an opening portion of the outer container is connected with the second connecting portion, and the edge of the fin is in contact with an inner wall of the opening portion of the outer container;

a through-bore closing disk which is placed on top of the flange portion, wherein the through-bore closing disk closes the through-bore without closing the hollow of the hollow portion; and

a nozzle portion which is secured to the opening portion of the outer container, between which the flange portion and the through-bore closing disk are sandwiched, wherein the fluid stored in the inner container is dispensed from a discharge port of the nozzle portion through the hollow of the hollow portion.

10. The fluid-storing container according to Claim 9, wherein the outer container has no air hole.

11. The fluid-storing container according to Claim 9, wherein the nozzle portion comprises a nozzle head provided with the discharge port, a lid secured to the opening portion of the outer container, and a pump mechanism for pumping the fluid from the inner container to the discharge port by pushing the nozzle head.

12. The fluid-storing container according to Claim 11, wherein the pump mechanism comprises:

a cylinder fitted inside the hollow portion of the coupling member, said cylinder having a lower end provided with a valve;

a piston which reciprocally slides against an inner wall of the cylinder to introduce the fluid therein through the valve and discharge the fluid through the discharge port;

a hollow rod for moving the piston, said rod being connected to the discharge port, wherein the fluid is discharged through the rod from the discharge port; and

an urging member for urging the hollow rod upward.

13. The fluid-storing container according to Claim 12, wherein the cylinder has a flange portion, and the lid is secured to the opening portion of the outer container, between which the flange portion of the cylinder, the through-bore closing disk, and the flange portion of the coupling member are sandwiched.

14. The fluid-storing container according to Claim 12, further comprising a suction tube having an upper end and a lower end, said upper end being connected to the lower end of the cylinder, said lower end being disposed near a bottom of the inner container, wherein the fluid is introduced into the cylinder through the suction tube.

15. The fluid-storing container according to Claim 10, wherein the nozzle portion comprises a lid provided with the discharge port, and a valve mechanism fitted inside the hollow portion of the coupling member.

16. The fluid-storing container according to Claim 15, wherein the valve mechanism comprises:

a valve seat portion fitted to an inner wall of the hollow portion, said valve seat portion having a fluid passage;

a valve body for closing and opening the fluid passage; and

a valve body support portion for supporting and urging the valve body downward.

17. The fluid-storing container according to Claim 16, wherein the valve seat portion has an annular convex portion to be fitted to the inner wall of the hollow portion.

18. The fluid-storing container according to Claim 15, wherein the outer container is flexible.

19. A fluid-storing container comprising:

an external container on top of which an opening portion is formed;

an internal container which comprises a flexible bag body having an opening portion and which can be housed inside said external container;

a nearly cylinder-shaped coupling material disposed at the opening portion of said internal container, which enables a fluid stored inside said internal container to be discharged outside via the opening portion of said external container and forms an internal space shielded from the outside between said internal container and said external container by fixing the opening portion of said internal container in the vicinity of the opening portion of said external container; and

a fluid discharge pump for discharging the fluid stored inside said internal container from a nozzle head disposed over said external container by pressing said nozzle head,

wherein said coupling material comprises a runoff prevention mechanism which prevents the fluid from flowing out from said internal space to the outside and enables air to flow into said internal space from the outside.

20. The fluid-storing container according to Claim 19, wherein said fluid discharge pump is disposed inside said nearly cylinder-shaped coupling material.

21. The fluid-storing container according to Claim 19, wherein said runoff prevention mechanism comprises flexible leakproof portions having an umbrella shape which opens toward an internal direction of the external container and which has maximum outer diameter portions contacting an inner wall of the opening portion of the external container.

22. The fluid-storing container according to Claim 21, wherein said runoff prevention mechanism comprises a through-bore passing through between the outside and said internal space, which is formed in said coupling material, and a through-bore closing material closing said through-bore, which is disposed on top of said coupling material.

23. A fluid-storing container comprising:

an external container on top of which an opening portion is formed;

an internal container which comprises a flexible bag body having an opening portion and which can be housed inside said external container;

a nearly cylinder-shaped coupling material disposed at the opening portion of said internal container, which enables a fluid stored inside said internal container to be discharged outside via the opening portion of said external container and forms an internal space shielded from the outside between said internal container and said external container by fixing the opening portion of said internal container in the vicinity of the opening portion of said external container; and

a valve mechanism for discharging the fluid stored inside said internal container from an upper portion of said external container by applying pressure to the fluid stored inside said internal container,

wherein said coupling material comprises a runoff prevention mechanism which prevents the fluid from flowing out from said internal space to the outside and enables air to flow into said internal space from the outside.

24. The fluid-storing container according to Claim 23, wherein said valve mechanism is disposed inside said nearly cylinder-shaped coupling material.

25. The fluid-storing container according to Claim 23, wherein said runoff prevention mechanism comprises flexible leakproof portions having an umbrella shape which opens toward an internal direction of the external container and which has maximum outer diameter portions contacting an inner wall of the opening portion of the external container.

26. The fluid-storing container according to Claim 23, wherein said runoff prevention mechanism comprises a through-bore passing through between the outside and said internal space, which is formed in said coupling material, and a through-bore closing material closing said through-bore, which is disposed on top of said coupling material.